Energy Secretary Steven Chu listens to INL Laboratory Fellow Dave Petti explain an advanced reactor fuel development program during the secretary's INL visit on Monday.

Energy Secretary advocates clean-energy technologies in address to INL employees

By Kortny Rolston, *INL Communications & Governmental Affairs*

U.S. Secretary of Energy Steven Chu made two predictions during his speech Monday to employees from Idaho National Laboratory, the Idaho Cleanup Project, Advanced Mixed Waste Treatment Project and Naval Reactors Facility: The price of oil will continue to rise, and we will live in a carbon-constrained economy.

Chu observes an environmental chamber where a test protocol will determine how a battery functions in relation to its warranty.

Because of that, he said, the United States needs to consume less energy, develop low-carbon technologies – including nuclear energy – and invest in research that leads to technological breakthroughs.

"The famous American philosopher, Yogi Berra, said, 'It's tough to make predictions, especially about the future,'" Chu said. "But I feel safe making these predictions."

For the next 40-plus minutes, Chu explained the reasoning behind his predictions and the role INL and Department of Energy will play in solving these issues.

Chu watches as an INL employee explains the production element chopper at INL's Fuel Conditioning Facility.

Afterward, Chu toured INL's Fuel Conditioning Facility at the Materials and Fuels Complex and talked with top INL nuclear researchers. From there, he went to the INL Research Center, where he learned about hybrid energy systems, advanced vehicle and battery testing activities, and biomass feedstock pre-processing.

On oil prices, Chu said:

The majority of new oil that will be discovered in the United States will be offshore, a challenging environment from which to extract crude.
Battery technology and developing liquid fuels from grasses and other sources are part of DOE's strategy to reduce America's dependence on oil.

On living in a carbon-constrained world, Chu said:

Chu and INL Lab Director John Grossenbacher reflect on nuclear energy research at INL as they leave the Fuel Conditioning Facility.

- Scientists are collecting quality data on climate change.
- The climate has changed faster in the last 150 years than it did in the previous 2,000 years.
- Humans are contributing to the rapid change in climate and global temperatures. Scientists monitor the type of carbon in the atmosphere and it shows "fingerprints of fossil fuels."

Chu said while climate scientists are calling for aggressive action, some people are "muddying" the argument by insisting that imposing strict regulations would harm the economy.

He called making people decide between prosperity and protecting the earth "a false choice."

"We have to use energy more wisely, and we need to transition to being a leader in the clean-energy economy," he said.

From there, Chu outlined what America must do to slow climate change and reduce its dependence on oil. Besides conserving energy and investing in "breakthroughs," adding low-carbon energy sources, like nuclear energy, to the mix is crucial, he said.

On nuclear energy, he said:

- We need to burn a larger percent of nuclear fuel to increase efficiency and produce less waste.
- America needs to re-think the once-through fuel cycle and study other options, including full fuel recycling and a modified open cycle.
- A concerted effort is needed to figure out what to do with used fuel.
- Small, modular reactors may be the answer. They are cheaper, can be mass-produced and modified to work with existing transmission infrastructures.
- The federal Fiscal Year 2011 budget contains $39 million for small, modular reactor research.
- Modeling and simulation will advance nuclear technology development. INL is one of three labs participating in a nuclear energy modeling and simulation consortium.
- INL will play a large role in the development of small modular reactors and other nuclear technologies.

"The United States was the first country to build a nuclear reactor, but we are no longer, in all honesty, the leader in this area," Chu said. "Small modular reactors are where we can retake the lead."

Feature Archive

Chu and INL scientists discuss integrating nuclear, fossil and renewable energy systems.